

# Checklist of the continental fishes of the state of Chiapas, Mexico, and their distribution

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# **Abstract**

An updated checklist of the distribution of fishes that inhabit the continental waters of the Mexican state of Chiapas is presented. The state was compartmentalized into 12 hydrological regions for the purpose of understanding the distribution of fish fauna across a state with large physiographic variance. The ichthyofauna of Chiapas is represented by 311 species distributed in two classes, 26 orders, 73 families, and 182 genera, including 12 exotic species. The families with the highest number of species were Cichlidae, Poeciliidae, Sciaenidae, Carangidae, Ariidae, Gobiidae, and Haemulidae. This study attempts to close gaps in knowledge of the distribution of ichthyofauna in the diverse hydrological regions of Chiapas, Mexico.

#### **Keywords**

Distribution, endemism, fish diversity, ichthyology, southern Mexico

## Introduction

The hydrological wealth of Chiapas is manifested through its 72 perennial rivers and abundant streams, lakes, and ponds. The presence of large hydroelectric dams has significantly increased the surface area of the state's bodies of water (Velasco-Colín 1976). Chiapas has a coastline of 270 km and more than 70,000 hectares of estuaries and coastal lagoons (Contreras-Espinosa 2010), which favors the presence of rich fish diversity (Velasco-Colín 1976, Lozano-Vilano and Contreras-Balderas 1987, Rodiles-Hernández et al. 2005). Much of the state is located in the Usumacinta ichthyographic province/area of endemism (Miller et al. 2005, Matamoros et al. 2015), which means that its continental waters host a high number of endemic species, making Chiapas a freshwater biodiversity hotspot (Hudson et al. 2005, Matamoros et al. 2015).

Several attempts have been made to record continental water fish diversity in Chiapas through numerous works such as checklists, annotated checklists, books and scattered records in the literature (e.g. Velasco-Colín 1976, Lozano-Vilano and Contreras-Balderas 1987, Lazcano-Barrero and Vogt 1992, Tapia-García et al. 1998, Rodiles-Hernández et al. 1999, Rodiles-Hernández 2005, Rodiles-Hernández et al. 2005, 2013, Lozano-Vilano et al. 2007, González-Díaz et al. 2008, Espinosa-Pérez et al. 2011, Velázquez-Velázquez et al. 2013, Gómez-González et al. 2012, 2015). The first comprehensive publication on continental fishes of Chiapas was made by Velasco-Colín (1976), who reported 74 species distributed across 28 families. He also included brief information about the ecology, biology and distribution of several species and, in some cases, added relevant fishing information.

Subsequently Lozano-Vilano and Contreras-Balderas (1987) published an annotated checklist in which they registered 135 species belonging to 38 families in the state's continental waters. In addition to an increase in the number of data records, for the first time the distribution of fishes was associated with seven of the state's physiographic regions. Eighteen years later Rodiles-Hernández (2005) and Rodiles-Hernández et al. (2005) recorded 205 species in 44 families and 207 species in 45 families respectively. In the first study, distributions were reported at the level of the two main Chiapas river basins, the Grijalva-Usumacinta and the Coast of Chiapas, whereas, in the second study, the distributional geographic units were the Atlantic and the Pacific slope. Velázquez-Velázquez et al. (2013) was the last published attempt to summarize continental fishes of Chiapas. They reported 262 species across 57 families, and once again the geographic distribution units were the Grijalva and the Usumacinta River basins and the coast of Chiapas.

Two interesting trends emerge about the continental fishes of Chiapas. First, the number of recorded species has continued to increase over time likely due to an increase in sampling localities, implementation of new sampling techniques, new records and species descriptions. The second trend is related to the geographic units in which the state has been divided. For instance, Lozano-Vilano and Contreras-Balderas (1987) divided the state into seven physiographic regions, based on terrestrial relief. Most studies used broad delineations limited to the three major hydrologic regions (coast of Chiapas

and the Grijalva and Usumacinta River basins) masking detailed information on finer distributional patterns like localized endemism and drainage interconnections.

Therefore, the aim of this study is to provide an updated checklist of the continental fishes of Chiapas, including distribution data, based on extensive literature research and complemented with material deposited in the ichthyological collection of the Museum of Zoology at the University of Arts and Sciences of Chiapas (MZ-P-UNICACH). For the first time, we use finer scale geographic divisions for the state, implemented at the sub-basin level, following the National Institute of Statistics and Geography (INEGI 2010).

# Materials and methods

The bulk of records came from the material of 204 species deposited in the ichthyological collection of the MZ-P-UNICACH Museum of Zoology (MZ-P-UNICACH, SEMARNAT: CHIS-PEC-210-03-09). In addition, we performed an extensive literature review for records of continental fishes of Chiapas. The checklists previously published by Lozano-Vilano and Contreras-Balderas (1987), Rodiles-Hernández (2005), Rodiles-Hernández et al. (2005), Espinosa-Pérez et al. (2011), and Velázquez-Velázquez et al. (2013) were taken as the basis for this work and were supplemented with publications by Lazcano-Barrero and Vogt (1992), Tapia-García et al. (1998), Rodiles-Hernández et al. (1999), Lozano-Vilano et al. (2007) and Gómez-González et al. (2012, 2015) who developed lists for particular regions of the state. We also included Castro-Aguirre et al. (1999) and Miller et al. (2005).

Species were systematically arranged by order and family following Nelson (2006). Genera and species were arranged alphabetically; scientific names and authorities were corroborated following Eschmeyer et al. (2016). Tolerance to salinity was based on Myers (1938).

The 12 geographical units for Chiapas (Figure 1) were utilized to determine the distribution of each species across the state. These 12 units were based on existing hydrological sub-basins of the state (INEGI 2010). The main rivers, ponds, lakes and coastal lagoons of each sub-basin are listed in Table 1.

#### Results

The continental fishes of the state of Chiapas are represented by two classes, 26 orders, 73 families, 182 genera and 311 species (Table 2), including 12 exotic species (Ctenopharyngodon idella, Cyprinus carpio, Micropterus salmoides, Oncorhynchus mykiss, Oreochromis aureus, Oreochromis mossambicus, Oreochromis niloticus, Parachromis managuensis, Pterygoplichthys disjunctivus, Pterygoplichthys multiradiatus, Pterygoplichthys pardalis, and Tilapia zilli). Only five species were endemic: the catfish Lacantunia enigmatica, the cichlids Rocio ocotal and Thorichthys socolofi, the killifish Tlaloc hildebrandi and the molly Poecilia

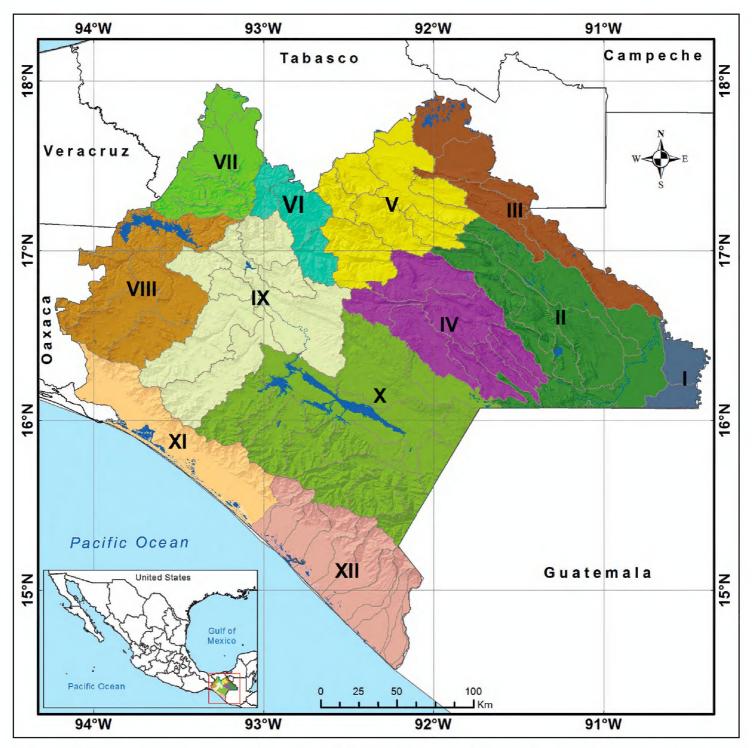


Figure I. Geographical units for the study of the distribution of the fish fauna of the state of Chiapas: I (Usumacinta-Chixoy) II (Usumacinta-Lacantún) III (Usumacinta-Catazajá) IV (Usumacinta-Jataté) V (Grijalva-Tulijá) VI (Grijalva-Teapa) VII (Grijalva-Peñitas) VIII (Grijalva-Malpaso), IX (Grijalva-Chicoasén) X (Grijalva-La Angostura) XI (Costa-Itsmo) XII (Costa-Soconusco).

thermalis. Based on species richness the most important families were: Cichlidae (35), Poeciliidae (29), Sciaenidae (18), Carangidae (17), Ariidae (16), Gobiidae (12), and Haemulidae (11). Almost all of these families, except the first two, contains peripheral species. These eight families represented 44.37% (138) of the state's total species richness. Thirteen species are included in risk categories under Mexican law (NOM-059-SEMAR-NAT-2010; SEMARNAT, 2010): Poecilia sulphuraria and Tlaloc hildebrandi are listed as endangered; Priapella compressa, Thorichthys socolofi, Vieja hartwegi and Xiphophorus clemenciae are listed as threatened; finally Chiapaheros grammodes, Gambusia eurystoma, Hippocampus ingens, Potamarius nelsoni, Priapella intermedia, Rhamdia guatemalensis and Chuco intermedium are listed as species under special protection. Based on general salinity

**Table 1.** Geographic units utilized to study the distribution of the fish fauna of Chiapas and sub-basins that form them.

Hidrological region	Basin	Sub-basin	Geographic unit
		R. Suchiate	
		R. Cozoloapan	
	R. SUCHIATE AND	R. Cahuacán	
	OTHERS	Puerto Madero	
		R. Coatán	
		R. Huehuetán	C4- S
		R. Huixtla	Costa-Soconusco
		R. Despoblado	
	R. HUIXTLA AND	L. del Viejo y Tembladeras	
	OTHERS	R. Cacaluta	
		R. Sesecapa	
COSTA DE CHIAPAS		R. Novillero	
CHIAPAS		R. Margaritas y Coapa	
		R. Pijijiapan	
	R. PIJIJIAPAN AND	R. San Diego	
	OTHERS	El Porvenir	1
		R. Jesús	
		L. de la Joya	Costa-Istmo
		R. Zanatenco	
		Mar Muerto	
	MAR MUERTO	R. La Punta	
	17.0	R. Las Arenas	
		R. Tapanatepec	7
		R. Usumacinta	
	R. USUMACINTA	R. Chacamax	Usumacinta-
		R. Chacaljáh	– Catazajá
	P. CLUWOV	R. Chixoy	Usumacinta-
	R. CHIXOY	R. Negro	Chixoy
		R. Viejo Mezcalapa	
		R. Mezcalapa	
		R. Tzimbac	
		R. Zayula	7
GRIJALVA -		R. Platanar	Grijalva-Peñitas
USUMACINTA		R. Paredón	7
		R. Pichucalco	
	R. GRIJALVA -	R. Tacotalpa	
	VILLAHERMOSA	R. Samaria	
		R. de la Sierra	
		R. Almendro	Grijalva-Teapa
		R. Plátanos	
		R. Chacté	
		R. Puxcatán	Grijalva.Tulijá
		R. Macuspana	

Hidrological region	Basin	Sub-basin	Geographic unit
		R. Shumulá	
		R. Yashijá	
		R. Tulijá	
		R. Bascá	
		R. Chilapa	
		P. Nezahualcóyotl	
		R. La Venta	
	4	R. Encajonado	Grijalva-Malpaso
		R. Cintalapa	- i
	2 2 . A D	R. de Zoyatenco	
	R. GRIJALVA - TUXTLA	R. Alto Grijalva	
	GUTIÉRREZ	R. Hondo	
	100 - 100	R. Chicoasén	
		R. Suchiapa	Grijalva-Chicoasé
		Tuxtla Gutiérrez	
		El Chapopote	
		R. Santo Domingo	
		P. La Angostura	
		R. Selegua	
		R. Lagartero	
		R. Aguacatenco	
	1)	R. San Pedro	
GRIJALVA -	4.4	R. La Concordia	
JSUMACINTA	R. GRIJALVA - LA	R. Grande o Salinas	Grijalva-La
	CONCORDIA		Angostura
		R. Aguazurco	
		R. San Miguel	
		R. Yahuayita	
		R. Zacualpa	
	A 25	R. Tapizaca	
		R. Comitan	
		R. Lacantún	
		R. Ixcán	
		R. Chajul	
		R. Lacanjá	Usumacinta-
		R. San Pedro	Lacantún
		L. Miramar	
		R. Perlas	
	R. LACANTÚN	R. Jataté	
		R. Azul	
		R. Tzaconejá	
		R. Margaritas	
		R. Santo Domingo	Usumacinta-Jatat
		R. Seco	
		R. Caliente	
		R. Euseba	

**Table 2.** Systematic list of the continental waters ichthyofauna of Chiapas. Ecological classification: PF (Primary Freshwater), SF (Secondary Freshwater), PF (Peripheral Vicarious), PC (Peripheral Catadromous), P (Peripheral), Ex (Exotic).

No	Taxon	Ecological classification	Grijalva- La Angostura	Grijalva-Chicoasén	Grijalva-Malpaso	Grijalva-Peñitas	Grijalva- Teapa	Grijalva-Tulijá	Usumacinta-Jataté	Usumacinta-Lacantún	Usumacinta- Chixoy	Usumacinta-Catazajá	Costa-Istmo	Costa-Soconusco
	Order Charcharhiniformes													
	I Family Carcharhinidae													
1	Carcharhinus leucas (Müller & Henle, 1839)	P											X	
2	Carcharhinus limbatus (Müller & Henle, 1839)	P											X	x
3	Carcharhinus cerdale Gilbert, 1898	P											X	
4	Rhizoprionodon longurio (Jordan & Gilbert, 1882)	P											X	
5	Negaprion brevirostris (Poey, 1868)	P											X	
	II Family Sphyrnidae													
6	Sphyrna tiburo (Linnaeus, 1758)	P											X	
	Order Pristiformes													
	III Family Pristidae													
7	Pristis pectinata Latham, 1794	P											X	
8	Pristis microdon Latham, 1794	P											X	
	Order Rhinobatiformes													
	IV Family Rhinobatidae													
9	Pseudobatos glaucostigma (Jordan & Gilbert, 1883)	P											X	
	Order Myliobatiformes													
	V Family Urotrygonidae													
10	Urotrygon aspidura (Jordan & Gilbert, 1882)	P											X	
11	Urotrygon chilensis (Günther, 1872)	P											X	
12	Urotrygon munda Gill, 1863	P											X	
13	Urotrygon nana Miyake & McEachran, 1998	P											X	
14	Urotrygon rogersi (Jordan & Starks, 1895)	P											X	
	VI Family Dasyatidae													
15	Hypanus longus (Garman, 1880)	P											X	X
16	Himantura pacifica (Beebe & Tee-Van, 1941)	P											X	x
	VII Family Myliobatidae													
17	Aetobatus laticeps Gill, 1865	P											X	x
	VIII Family Rhinopteridae													
18	Rhinoptera steindachneri Evermann & Jenkins, 1891	P											X	x
	Order Lepisosteiformes													
	IX Family Lepisosteidae													
19	Atractosteus tropicus Gill, 1863	PF				x				X	X	X	X	X
	Order Elopiformes													
	X Family Elopidae													
20	Elops affinis Regan, 1909	P											X	X
	XI Family Megalopidae													
21	Megalops atlanticus Valenciennes, 1847	P				x						x		

No	Taxon	Ecological classification	Grijalva- La Angostura	Grijalva-Chicoasén	Grijalva-Malpaso	Grijalva-Peńitas	Grijalva- Teapa	Grijalva-Tulijá	Usumacinta-Jataté	Usumacinta-Lacantún	Usumacinta- Chixoy	Usumacinta-Catazajá	Costa-Istmo	Costa-Soconusco
	Order Albuliformes									,	,	,		
	XII Family Albulidae													
22	Albula esuncula (Garman, 1899)	P											x	
	Order Anguiliformes													
	XIII Family Ophichthidae													
23	Myrichthys xysturus (Jordan & Gilbert, 1882)	P											X	
24	Ophichthus zophochir Jordan & Gilbert, 1882	P											X	x
	Order Clupeiformes													
	XIV Family Pristigasteridae													
25	Pliosteostoma lutipinnis (Jordan & Gilbert, 1882)	P											X	
26	Odontognathus panamensis (Steindachner, 1876)	P											x	
27	Opisthopterus dovii (Günther, 1868)	P											21	X
	XV Family Engraulidae													А
28	Anchoa argentivittata (Regan, 1904)	P											X	
29	Anchoa curta (Jordan & Gilbert, 1882)	P											X	X
30	Anchoa ischana (Jordan & Gilbert, 1882)	P											X	X
31	Anchoa lucida (Jordan & Gilbert, 1882)	P											X	X
32	Anchoa mitchilli (Valenciennes, 1848)	P										v	Λ	Λ
33	Anchoa mundeola (Gilbert & Pierson, 1898)	P										X	37	N/
34	Anchoa walkeri Baldwin & Chang, 1970	P											X	X
35	Anchoa starksi (Gilbert & Pierson, 1898)	P											X	37
36	Anchovia macrolepidota (Kner, 1863)	P											X	X
30	XVI Family Clupeidae	I											X	X
27	Dorosoma anale Meek, 1904	D (V)												
37	·	P (V)	X	X	X	X	X	X		X	X	X		
38	Dorosoma petenense (Günther, 1867)	P (V)	X	X	X	X	X	X		X	X	X		
39	Harengula thrissina (Jordan & Gilbert, 1882)	P											X	
40	Lile gracilis Castro-Aguirre & Vivero, 1990	P											X	X
41	Lile nigrofasciata Castro-Aguirre, Ruiz-Campos & Balart, 2005	P											X	x
42	Opisthonema libertate (Günther, 1867)	P											X	X
43	Opisthonema medirastre Berry & Barret, 1964	P											X	
	Order Gonorynchiformes	_												
	XVII Family Chanidae													
44	Chanos chanos (Forsskål, 1775)	P											X	X
	Order Cypriniformes												A	A
	XVIII Family Cyprinidae													
45	Ctenopharyngodon idella (Valenciennes, 1844) <sup>Ex</sup>	Ex				x	x	x		x	x	x		
46	Cyprinus carpio (Linnaeus, 1758) <sup>Ex</sup>	Ex	x	X		11		X		11		X		
	Family Catastomidae	LA	Λ	Λ				Λ				Λ		
47	Ictiobus meridionalis (Günther, 1868)	PF			X	X	X	X		X	X	х		
	er Characiformes	11			А	Λ	Λ	Λ		Λ	Λ	Λ		
	Family Characidae													
XX														
<b>XX</b> 3	Astyanax aeneus (Günther, 1860)	PF	x	X	X	х	x	x	X	X	X	X	X	X

No	Taxon	Ecological classification	Grijalva- La Angostura	Grijalva-Chicoasén	Grijalva-Malpaso	Grijalva-Peñitas	Grijalva- Teapa	Grijalva-Tulijá	Usumacinta-Jataté	Usumacinta-Lacantún	Usumacinta- Chixoy	Usumacinta-Catazajá	Costa-Istmo	Costa-Soconusco
50	Brycon guatemalensis Regan, 1908	PF	x	x	X	x	x	X		x	X	X		
51	Hyphessobrycon compressus (Meek, 1904)	PF				x				x	x	X		
52	Roeboides bouchellei Fowler, 1923	PF											x	x
	Order Siluriformes													
	XXI Family Lacantuniidae													
53	Lacantunia enigmatica Rodiles-Hernández, Hendrickson & Lundberg, 2005	PF								x				
	XXII Family Loricariidae													
54	Pterygoplichthys disjunctivus (Weber, 1991) Ex	Ex										X		
55	Pterygoplichthys multiradiatus (Hancock, 1828) Ex	Ex										X		
56	Pterygoplichthys pardalis (Castelnau, 1855) Ex	Ex				X	X	X		X		X		
	XXIII Family Heptapteridae													
57	Rhamdia guatemalensis (Günther, 1864)	PF	X	X	X	X	X	X	X	X	X	X	X	X
58	Rhamdia laluchensis Weber, Allegrucci & Sbordoni, 2003	PF			X									
59	Rhamdia laticauda (Kner, 1858)	PF			x	x	X	X		X	x	x		
60	Rhamdia parryi Eigenmann & Eigenmann, 1888	PF			Λ.	Λ	Λ	Λ		Λ	Λ	A	X	
-	XXIV Family Ictaluridae												71	
61	Ictalurus meridionalis (Günther, 1864)	PF	x	х	X	x	х	x		x	x	x		
-	XV Family Ariidae													
62	Bagre panamensis (Gill, 1863)	P												x
63	Bagre pinnimaculatus (Steindachner, 1876)	P												x
64	Cathorops dasycephalus (Günther, 1864)	P											X	
65	Cathorops cf. fuerthii	P												x
66	Cathorops kailolae Marceniuk & Betancur-R., 2008	P (V)		x	x	x				x	x	х		
67	Cathorops liropus (Bristol, 1897)	Р											X	X
68	Cathorops steindachneri (Gilbert & Starks, 1904)	P											x	X
69	Notarius kessleri (Steindachner, 1876)	P												X
70	Notarius planiceps (Steindachner, 1876)	P											X	
71	Notarius troschelii (Gill, 1863)	P											X	
72	Potamarius nelsoni (Evermann & Goldsborough, 1902)	P (V)			X	X	X	X		X	X	X		
73	Potamarius usumacintae Betancourt-R. & Willink, 2007	P (V)								х	х	X		
74	Sciades dowii (Gill, 1863)	P												X
75	Sciades felis (Linnaeus, 1766)	P										X		<u> </u>
76	Sciades guatemalensis (Günther, 1864)	P											X	X
77	Sciades seemanni (Günther, 1864)	P											X	X
	Order Gymnotiformes													
	XXVI Family Gymnotidae													
	1 111 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2					- 1								37
78	Gymnotus maculosus Albert & Miller, 1995  Order Salmoniformes	PF												X

No	Taxon	Ecological classification	Grijalva- La Angostura	Grijalva-Chicoasén	Grijalva-Malpaso	Grijalva-Peñitas	Grijalva- Teapa	Grijalva-Tulijá	Usumacinta-Jataté	Usumacinta-Lacantún	Usumacinta- Chixoy	Usumacinta-Catazajá	Costa-Istmo	Costa-Soconusco
	Order Aulopiformes													
	XXVIII Family Synodontidae													
80	Synodus scituliceps Jordan & Gilbert, 1881	P											X	X
	Order Batrachoidiformes													
	XXIX Family Batrachoididae													
81	Batrachoides boulengeri Gilbert & Starks, 1904	P											X	
82	Batrachoides goldmani Evermann & Goldsborough, 1902	P (V)			X	X	X	X		X	X	X		
83	Batrachoides waltersi Collette & Russo, 1981	P											X	X
84	Porichthys greenei Gilbert & Starks, 1904	P												X
	Order Mugiliformes													
	XXX Family Mugilidae													
85	Agonostomus monticola (Bancroft, 1834)	P (Ca)					X	X		X		X	X	X
86	Joturus pichardi Poey, 1860	P (Ca)								X		X		
87	Mugil cephalus Linnaeus, 1758	P											X	X
88	Mugil curema Valenciennes, 1836	P								X		X	X	X
89	Mugil hospes Jordan & Culver, 1895	P											X	X
	Order Atheriniformes													
	XXXI Family Atherinopsidae													
90	Atherinella guatemalensis (Günther, 1864)	P											X	X
91	Atherinella alvarezi (Díaz-Pardo, 1972)	P (V)	X	X	X	X	X	X		X	X	X		
92	Atherinella panamensis Steindachner, 1875	P											X	
93	Atherinella schultzi (Alvarez & Carranza, 1952)	P (V)				X				X	X	X		
94	Membras gilberti (Jordan & Bollman, 1889)	P											X	X
	Order Beloniformes													
	XXXII Family Hemiramphidae	D (7.7)												
95	Hyporhamphus mexicanus Alvarez, 1959	P (V)			X	X	X	X		X	X	X		
96	Hyporhamphus snyderi Meek & Hildebrand, 1973	P											X	X
97	Hyporhamphus naos Banford & Collette, 2001	P											X	X
00	XXXIII Family Belonidaex	D (II)												
98	Strongylura hubbsi Collette, 1974	P (V)			X	X	X	X		X	X	X		
99	Strongylura exilis (Girard, 1854)	P												X
100	Tylosurus fodiator Jordan & Gilbert, 1882	P												X
	Order Cyprinodontiformes  XXXIV Family Rivulidae													
101	Cynodonichthys tenuis Meek, 1904	SF				v		v		v	v	v		
101	XXXV Family Profundulidae	31				X		X		X	X	X		
102	Profundulus punctatus (Günther, 1866)	SF		X	X								X	
103	Tlaloc candalarius (Hubbs, 1924)	SF	X	Λ	Λ								Λ	
$\frac{103}{104}$	Tlaloc hildebrandi Miller, (1950)	SF	Λ				X		X					
104	Tlaloc labialis (Günther, 1866)	SF	X	X	X	X	X	X	Λ				X	
10)	XXXVI Family Anablepidae	01	^	Λ		Λ	Λ	Λ		<u> </u>			Λ	
106	Anableps dowei Gill, 1861	SF												X

No	Taxon	Ecological classification	Grijalva- La Angostura	Grijalva-Chicoasén	Grijalva-Malpaso	Grijalva-Peńitas	Grijalva- Teapa	Grijalva-Tulijá	Usumacinta-Jataté	Usumacinta-Lacantún	Usumacinta- Chixoy	Usumacinta-Catazajá	Costa-Istmo	Costa-Soconusco
	XXXVII Family Poeciliidae													
107	Belonesox belizanus Kner, 1860	SF				x		x		х	x	x		
108	Brachyrhaphis hartwegi Rosen & Bailey, 1982	SF												Х
109	Carlhubbsia kidderi (Hubbs, 1936)	SF				x					x	х		
110		SF					x							
111	Gambusia sexradiata Hubbs, 1936	SF		x	x	X	x	X		x	X	х		
112	Gambusia yucatana Regan, 1914	SF			х	x						x		
	Heterophallus echeagarayi (Alvarez, 1952)	SF				x						x		
	Heterophallus milleri Radda, 1987	SF					x							
115	Phallichthys fairweatheri Rosen & Bailey, 1959	SF								x	x	x		
	Poecilia kykesis Poeser, 2002	SF									71	x		
117	Poecilia mexicana Steindachner, 1863	SF			x	x	x	x	x	x	x	x		
	Poecilia nelsoni (Meek, 1904)	SF			- A.	71	21.	71.	71.	A	24.	21	X	X
119	Poecilia sphenops Valenciennes, 1836	SF	x	x	х	X		X		x	X	x	X	X
		SF		Λ.	Λ.	A.	X	A		Λ.	A	^		A
121	Poecilia thermalis Steindachner, 1863	SF					X							
	Poeciliopsis fasciata (Meek, 1904)	SF	x	X	X		Λ						X	X
	Poeciliopsis hnliickai Meyer & Vogel, 1981	SF	X	X	X									Λ
	Poeciliopsis pleurospilus (Günther, 1868)	SF				***							37	37
125	Poeciliopsis turrubarensis (Meek, 1912)	SF	X	X	X	X							X	X
	<u> </u>	SF											X	X
	Priapella intermedia Alvarez & Carranza, 1952	SF			X									<del>                                     </del>
127	Priapella chamulae Schartl, Meyer & Wilde, 2006					X	X							
128	Priapella compressa Alvarez, 1948	SF						X						
129	Priapella lacandonae Meyer, Schories & Schartl, 2011	SF										x		
130	Pseudoxiphophorus bimaculatus (Heckel, 1848)	SF			X	x	X	x	X	x	X	x		
	Xenodexia ctenolepis Hubbs, 1950	SF			-A	21.	21.	24.	71.	X	24.	A		
	Xiphophorus alvarezi Rosen, 1960	SF							X	Λ.				
	Xiphophorus clemenciae Álvarez, 1959	SF			x				21.					
	Xiphophorus hellerii Heckel, 1848	SF			X	X	X	X		x	X	x		
	Xiphophorus maculatus (Günther, 1866)	SF			73.	X	71.	71.		X	X	x		
100	Order Syngnathiformes	01				71				Λ	Λ			
	XXXVIII Family Syngnathidae													
136	Hippocampus ingens Girard, 1859	P											X	X
137	Pseudophallus starksii (Jordan & Culver, 1895)	P											X	X
1.3/	XXXIX Family Fistulariidae	1											Λ	_ A
130	Fistularia commersonii Rüppell, 1838	P											X	
1,00	Order Synbranchiformes	1											Λ	
	XL Family Synbranchidae													
139	Ophisternon aenigmaticum Rosen & Greenwood,	PF		x	X	X	x	X		X	X	X		
	1976		_											<u> </u>

No	Taxon	Ecological classification	Grijalva- La Angostura	Grijalva-Chicoasén	Grijalva-Malpaso	Grijalva-Peñitas	Grijalva- Teapa	Grijalva-Tulijá	Usumacinta-Jataté	Usumacinta-Lacantún	Usumacinta- Chixoy	Usumacinta-Catazajá	Costa-Istmo	Costa-Soconusco
	Order Perciformes									,	,			
	XLI Family Centropomidae													
141	Centropomus armatus Gill, 1863	P											x	x
142	Centropomus medius Günther, 1864	P											x	x
143	Centropomus nigrescens Günther, 1864	P											х	х
144	Centropomus robalito Jordan & Gilbert, 1882	P											x	X
145	Centropomus undecimalis (Bloch, 1792)	P				X				x	X	х		
146	Centropomus parallelus Poey, 1860	P								x		x		
147	Centropomus poeyi Chávez, 1961	P										x		
148	Centropomus unionensis Bocourt, 1868	P												x
149	Centropomus viridis Lockington, 1877	P											x	x
	XLII Family Serranidae											•		
150	Dermatolepis dermatolepis (Boulenger, 1895)	P											x	
151	Alphestes multiguttatus (Günther, 1867)	P											x	Х
152	Epinephelus labriformis (Jenyns, 1840)	P											x	
153	Epinephelus analogus Gill, 1863	P												x
154	Epinephelus quinquefasciatus (Bocourt, 1868)	P												х
155	Mycteroperca xenarcha Jordan, 1888	P												X
156	Rypticus nigripinnis Gill, 1861	P												x
	XLIII Family Centrarchidae													
157	Micropterus salmoides (Lacepéde, 1802) <sup>Ex</sup>	Ex	x	x										
	XLIV Family Nematistiidae													
158	Nematistius pectoralis Gill, 1862	P											x	x
	XLV Family Carangidae													
159	Carangoides otrynter (Jordan & Gilbert, 1883)	P												x
160	Carangoides vinctus (Jordan & Gilbert, 1882)	P												X
161	Caranx caballus Günther, 1868	P												X
162	Caranx caninus Günther, 1867	P											x	x
163	Caranx sexfasciatus Quoy & Gaimard, 1825	P												x
164	Chloroscombrus orqueta Jordan & Gilbert, 1883	P											x	
165	Gnathanodon speciosus (Forsskål, 1775)	P											X	
166	Hemicaranx leucurus (Günther 1864)	P												X
167	Hemicaranx zelotes Gilbert, 1898	P											X	X
168	Oligoplites altus (Günther, 1868)	P											X	X
169	Oligoplites saurus (Bloch & Schneider, 1801)	P											X	X
170	Selene brevoortii (Gill, 1863)	P												X
171	Selene oerstedii Lütken, 1880	P											X	X
172	Selene peruviana (Guichenot, 1866)	P											X	X
173	Trachinotus kennedyi Steindachner, 1876	P											X	X
174	Trachinotus paitensis Cuvier, 1832	P											X	
175	Trachinotus rhodopus Gill, 1863	P											X	X
	XLVI Family Lutjanidae													
176	Hoplopagrus guentherii Gill, 1862	P											X	X

No	Taxon	Ecological classification	Grijalva- La Angostura	Grijalva-Chicoasén	Grijalva-Malpaso	Grijalva-Peńitas	Grijalva- Teapa	Grijalva-Tulijá	Usumacinta-Jataté	Usumacinta-Lacantún	Usumacinta- Chixoy	Usumacinta-Catazajá	Costa-Istmo	Costa-Soconusco
177	Lutjanus argentiventris (Peters, 1869)	P											X	X
178	Lutjanus colorado Jordan & Gilbert, 1882	P											X	X
179	Lutjanus guttatus (Steindachner, 1869)	P											X	X
180	Lutjanus novemfasciatus Gill, 1862	P											x	X
	XLVII Family Lobotidae													
181	Lobotes pacificus Gilbert, 1898	P												x
	XLVIII Family Gerreidae													
182	Diapterus brevirostris (Sauvage, 1879)	P											X	x
183	Eucinostomus currani Zahuranec, 1980	P											X	X
184	Eucinostomus dowii (Gill, 1863)	P											X	X
185	Eucinostomus gracilis (Gill, 1862)	P											X	
186	Eugerres axillaris (Günther, 1864)	P											X	X
187	Eugerres lineatus (Humboldt, 1821)	P											X	
188	Eugerres mexicanus (Steindachner, 1879)	P (V)		X	Х	X	X	X				X		
189	Gerres simillimus Regan, 1907	P											X	X
	XLIX Family Haemulidae													
	Conodon serrifer Jordan & Gilbert, 1882	P											X	
191	Genyatremus pacifici (Günther, 1864)	P											X	X
	1	P											X	X
193	Haemulopsis elongatus (Steindachner, 1879)	P											X	
194	Haemulopsis leuciscus (Günther, 1864)	P											X	X
195	Haemulopsis nitidus (Steindachner, 1869)	P											X	
196	Orthopristis chalceus (Günther, 1864)	P											X	
197	Pomadasys bayanus Jordan & Evermann, 1898	P												X
198	Pomadasys branickii (Steindachner, 1879)	P											X	
199	Pomadasys macracanthus (Günther, 1864)	P											X	X
200	Pomadasys panamensis (Steindachner, 1876)	P											X	
	L Family Polynemidae													
201	Polydactylus approximans (Lay & Bennett, 1839)	P											X	X
202	Polydactylus opercularis (Gill, 1863)	P											X	X
202	LI Family Sciaenidae	D (V)												Π
$\frac{203}{204}$		P (V)		X	X	X	X	X		X	X	X		<del></del>
$\frac{204}{205}$	-	P												X
206	Bairdiella ensifera (Jordan & Gilbert, 1882)	P											X	X
207	Bairdiella icistia (Jordan & Gilbert, 1882)  Cynoscion albus (Günther, 1864)	P											X	***
$\frac{207}{208}$	Cynoscion stolzmanni (Steindachner, 1879)	P											X	X
208	Cynoscion stotzmanni (Steindachner, 1879)  Cynoscion xanthulus Jordan & Gilbert, 1882	P											X	
$\frac{209}{210}$	Elattarchus archidium (Jordan & Gilbert, 1882)	P											X	-
$\frac{210}{211}$	Isopisthus remifer Jordan & Gilbert, 1882	P											X	**
$\frac{211}{212}$	Larimus effulgens Gilbert, 1898	P												X
$\frac{212}{213}$		P												X
$\Delta 1 \mathcal{I}$	1416 muli in in a ciongulus (Gunther, 1004)	1												X

	I													
No	Taxon	Ecological classification	Grijalva- La Angostura	Grijalva-Chicoasén	Grijalva-Malpaso	Grijalva-Peñitas	Grijalva- Teapa	Grijalva-Tulijá	Usumacinta-Jataté	Usumacinta-Lacantún	Usumacinta- Chixoy	Usumacinta-Catazajá	Costa-Istmo	Costa-Soconusco
215	Menticirrhus panamensis (Steindachner, 1876)	P	_							-	,		x	
216		P											X	X
217	Micropogonias megalops (Gilbert, 1890)	P											X	
218	Nebris occidentalis Vaillant, 1897	P												X
219	Paralonchurus goodei Gilbert, 1898	P												X
220	Stellifer cf. walkeri	P												X
	LII Family Mullidae	l				l								
221	Pseudupeneus grandisquamis (Gill, 1863)	P											X	
	LIII Family Kyphosidae					ı								
222	Kyphosus elegans (Peters, 1869)	P											X	X
	LIV Family Chaetodontidae			ı		ı								
223	Chaetodon humeralis Günther, 1860	P											X	x
	LV Family Cichlidae													
224	Amphilophus trimaculatus (Günther, 1867)	SF		x	X								X	x
225	Astatheros macracanthus (Günther, 1864)	SF	x		X								X	x
226	Chiapaheros grammodes (Taylor & Miller, 1980)	SF	х	х										
227	Cincelichthys pearsei (Hubbs, 1936)	SF		x	х	x		x		x	X	X		
228	Chuco intermedium (Günther, 1862)	SF	x				X	x	x	x	x	X		
229	Cribroheros robertsoni (Regan, 1905)	SF				X						х		
230	Kihnichthys ufermanni Allgayer, 2002	SF								x	X	X		
231	Maskaheros argenteus (Allgayer, 1991)	SF				х				x	х	x		
232	Maskaheros regani (Miller, 1974)	SF		x	X									
233	Mayaheros urophthalmus (Günther, 1862)	SF			x	x				x	x	X		
234	Oreochromis aureus (Steindachner, 1864) Ex	Ex								x				
235	Oreochromis mossambicus (Peters, 1852) Ex	Ex	x		x					x				
236	Oreochromis niloticus (Linnaeus, 1758) Ex	Ex	x	x	x	x	x	x		x	X	X	X	x
237	Oscura heterospila (Hubbs, 1936)	SF				X		X				X		
238	Parachromis friedrichsthalii (Heckel, 1840)	SF								x	X	X		
239	Parachromis managuensis (Günther, 1867) Ex	Ex		x	X	X		x		x	x	X		X
240	Paraneetroplus gibbiceps (Steindachner, 1864)	SF					x	x						
241	Petenia splendida Günther, 1862	SF		x	X	X		X		x	x	X		
242	Rocio ocotal Schmitter-Soto, 2007	SF								x				
243	Rocio octofasciata (Regan, 1903)	SF				X		x		x	X	X		
244	Theraps irregularis Günther, 1862	SF							X	x	X	X		
245	Thorichthys meeki Brind, 1918	SF				x				X	X	x		
246	Thorichthys pasionis (Rivas, 1962)	SF				X					X	X		
247	Thorichthys socolofi (Miller & Taylor, 1984)	SF						X		X				
248	Thorichthys helleri (Steindachner, 1864)	SF			x	x	x	x	x	X	x	x		
249	Trichromis salvini (Günther, 1862)	SF			x	X		x	x	X	x	X		
250	Tilapia zilli (Gervais, 1848) Ex	Ex	x	X	X									
251	Rheoheros coeruleus (Stawikowski & Werner, 1987)	SF						X						
252	Rheoheros lentiginosus (Steindachner, 1864)	SF					x	X	X	X	X	X		
253	Vieja bifasciata (Steindachner, 1864)	SF				X	X	X		X	X	X		

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254	Vieja breidohri (Werner & Stawikowski, 1987)	SF	X											
255	Vieja guttulata (Günther, 1864)	SF												x
256	Vieja hartwegi (Taylor & Miller, 1980)	SF	x	x	х	х								
257	Vieja melanura (Günther, 1862)	SF		x	x	x		x		x	x	x		
258	Wajpamheros nourissati (Allgayer, 1989)	SF								x	x	х		
	LVI Family Pomacentridae							'						
259	Abudefduf troschelii (Gill, 1862)	P											X	х
260	Stegastes flavilatus (Gill, 1862)	P											X	
	LVII Family Labridae										•			
261	Halichoeres aestuaricola Bussing, 1972	P												х
262	Halichoeres dispilus (Günther, 1864)	P											x	
	LVIII Family Scaridae													
263	Nicholsina denticulata (Everman & Radcliffe, 1917)	P											x	
	LIX Family Dactyloscopidae													
264	Dactyloscopus lunaticus Gilbert, 1890	P											x	X
265	Dactyloscopus amnis Miller & Briggs, 1962	P											x	
	LX Family Eleotridae													
266	Dormitator latifrons (Richardson, 1844)	P											X	X
267	Eleotris picta Kner, 1863	P											X	x
268	Erotelis armiger (Jordan & Richardson, 1895)	P											X	x
269	Gobiomorus dormitor Lacepéde, 1800	P				X		X		x	X	X		
270	Gobiomorus maculatus (Günther, 1859)	P											X	x
271	Guavina micropus (Ginsburg, 1953)	P												X
272	Leptophilypnus guatemalensis Thacker & Pezold, 2006  LXI Family Gobiidae	P (V)								X	X			
273	Aboma etheostoma Jordan & Starks, 1895	P											X	X
274	Awaous transandeanus (Günther, 1861)	P (Ca)											X	
275	Barbulifer mexicanus Hoese & Larson, 1985	P											x	
276	Bathygobius andrei (Sauvage, 1880)	P											x	X
277	Ctenogobius sagittula (Günther, 1862)	P											x	X
278	Evorthodus minutus Meek & Hildebrand, 1928	P											X	X
279	Gobioides peruanus (Steindachner, 1880)	P												X
280	Gobionellus liolepis (Meek & Hildebrand, 1928)	P												x
281	Gobionellus microdon (Gilbert, 1892)	P											x	X
282	Microgobius miraflorensis Gilbert & Starks, 1904	P											X	x
283	Parrella lucretiae (Eigenmann & Eigenmann, 1888)	P											X	
284	Sicydium salvini Ogilvie-Grant, 1884	P (Ca)												x
	LXII Family Microdesmidae													
285	Microdesmus dorsipunctatus Dawson, 1968	P											X	X
286	Microdesmus suttkusi Gilbert, 1966	P												X
	LXIII Family Ephippidae													
287	Chaetodipterus zonatus (Girard, 1858)	P											X	X
288	Parapsettus panamensis (Steindachner, 1876)	P												X

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	LXIV Family Acanthuridae													
289	Acanthurus xanthopterus Valenciennes, 1835	P											X	
	LXV Family Sphyraenidae													
290	Sphyraena ensis	P											X	
	LXVI Family Trichiuridae													
291	Trichiurus nitens Garman, 1899	P												X
	LXVII Family Scombridae													
292	Scomberomorus sierra Jordan & Starks, 1895	P											X	X
	Order Pleuronectiformes													
	LXVIII Family Paralichthydae													
293	Citharichthys gilberti Jenkins & Evermann, 1889	P											X	X
294	Cyclopsetta panamensis (Steindachner, 1876)	P											X	
295	Etropus crossotus Jordan & Gilbert, 1882	P											X	
296	Syacium latrifons (Jordan & Gilbert, 1882)	P											X	
297	Syacium ovale (Günther, 1864)	P											X	
	LXIX Family Achiridae													
298	Achirus mazatlanus (Steindachner, 1869)	P											X	X
299	Achirus scutum (Günther, 1862)	P											X	X
300	Achirus zebrinus Clark, 1936	P											X	
301	Trinectes fimbriatus (Günther, 1862)	P												X
302	Trinectes fonsecensis (Günther, 1862)	P											X	X
	LXX Family Cynoglossidae													
303	Symphurus chabanaudi Mahadeva & Munroe, 1990	P												X
304	Symphurus elongatus (Günther, 1868)	P											X	
305	Symphurus melanurus Clark, 1936	P											X	
	Order Tetraodontiformes													
	LXXI Family Balistidae													
306	Pseudobalistes naufragium (Jordan & Starks, 1895)	P											X	X
	LXXII Family Tetraodontidae													
307	Arothron meleagris (Bloch & Schneider, 1801)	P												X
308	Sphoeroides annulatus (Jenyns, 1842)	P											X	X
309	Sphoeroides rosenblatti Bussing, 1996	P											X	X
	LXXIII Family Diodontidae													
310	Diodon holocanthus Linnaeus, 1758	P												X
311	Diodon hystrix Linnaeus, 1758	P											X	X
	Total species by geographical units		23	31	45	55	36	46	11	63	54	72	174	153

tolerance, and excluding exotic species, 16 are primary freshwater fishes, 65 secondary freshwater fishes, and the rest of the species are peripheral (Table 2).

Of the 12 geographical units (Fig. 1), the region with the highest number of species was Costa-Itsmo with 174 species, followed by Costa-Soconusco with 153 species and

the third was Usumacinta-Catazajá with 72 species. The region with the lowest recorded species was Usumacinta-Jataté with only 11 species. Numbers of species from other geographical units are presented in Table 2. Spatially, Astyanax aeneus and Rhamdia guatemalensis appeared in all regions within Chiapas. Other species with widespread distributions were Poecilia sphenops and the exotic cichlid Oreochromis niloticus (10 and 11 regions respectively). Atherinella alvarezi, Brycon guatemalensis, Dorosoma anale, Dorosoma petenense, and Ictalurus meridionalis were distributed in nine regions, while Aplodinotus grunniens, Gambusia sexradiata, Ophisternon aenigmaticum, Parachromis managuensis, Poecilia mexicana, Pseudoxiphophorus bimaculatus, and Thorichtys helleri were recorded in eight regions.

Eight marine species were newly recorded as species found in continental waters of Chiapas: Acanthurus xanthopterus, Atherinella panamensis, Fistularia commersonii, Halichoeres dispilus, Nicholsina denticulata, Orthopristis chalceus, Stegastes flavilatus, and Sphyraena ensis.

### **Discussion**

Knowledge of the species richness of continental fishes in Chiapas has increased significantly over recent years compared to previous assessments (e.g. Rodiles-Hernández et al. 2005, Velázquez-Velázquez et al. 2013). The increasing number of known species is the result of collections in new localities, improvement in sampling effort, and larger systematic and taxonomic reviews. For instance, an extensive literature search provided many reports of marine species, principally elasmobranchs, in continental waters of Chiapas by Castro-Aguirre et al. (1999). The large increment in the checklist is due to the inclusion of many elasmobranchs fishes that were included previously in the work of Castro-Aguirre et al. (1999), but that for some reason these records were ignored in more recent accounts of fishes in the continental waters of Chiapas. Castro-Aguirre et al. (1999) reported 41 species of marine fishes including an important number of sharks and sting-rays in the state continental water.

Two species previously reported were removed from the list of species in Chiapas in this study: the American eel (*Anguilla rostrata*) and the Mexican tetra (*Astyanax mexicanus*). The American eel was mentioned in the pioneering work of Velasco-Colín (1976), and since then listed in subsequent publications (Lozano-Vilano and Contreras-Balderas 1987, Rodiles-Hernández 2005, Rodiles-Hernández et al. 2005, Espinosa-Pérez et al. 2011, Velázquez-Velázquez et al. 2013). However, these works do not offer precise geographical locations for these species and there are no vouchered specimens from Chiapas in national or international collections. Records of the Mexican tetra in Chiapas probably contain misidentifications as mentioned by Lozano-Vilano and Contreras-Balderas (1987) and Ornelas-García et al. (2008), thus supporting the absence of this species in Southern Mexico. We have included Important and recent taxonomic changes made in the family Cichlidae by McMahan et al. (2015) and Říčan et al. (2016), the family Poeciliidae by Palacios et al. (2016) and the family Profundulidae by Morcillo et al. (2016).

More than 1000 species of fishes have been reported in the continental waters of Mexico, including freshwater and estuarine fishes (Espinosa-Pérez 2014). The continental fish fauna of the state of Chiapas represents approximately 29% of the continental fish fauna of the entire country of Mexico. This highlights the great diversity of fishes inhabiting continental environments of Chiapas as a result of the region's hydrological wealth. Our results are comparable with those from other southern Mexican states such as Quintana Roo (Schmitter-Soto 1998), Oaxaca (Martínez-Ramírez et al. 2004) and Tabasco (Espinosa-Pérez and Daza-Zepeda 2005).

The native obligate freshwater (primary and secondary) species of Chiapas accounted for only 26% (81) of the state's total species richness. The communities are dominated by peripheral species, many of them permanent (vicarious) residents of the Grijalva-Usumacinta basin (e.g. Aplodinotus grunniens, Eugerres mexicanus, Hyporhamphus mexicanus, Strongylura hubbsi), but the majority are distributed in brackish environments of the Costa-Itsmo and Costa-Soconusco sub-basins. Some of these communities also permeate nearby rivers. In terms of slopes, the Pacific slope houses 68% of the state fish fauna while the Gulf slope houses 33%, and in terms of regional diversity the Usumacinta region is considered one of the most diverse areas of endemism for freshwater fishes in Central America; however, from a biogeographical perspective the entire Central American region has a depauperate freshwater fish fauna compared with the vast diversity of ostariophysan fishes found in North and South America (Miller 1966, Myers 1966, Bussing 1985, Chakrabarty and Albert 2011, Matamoros et al. 2015). This could explain the presence of a great number of peripheral species recorded in the continental environments of Chiapas. This pattern is comparable with other countries of Central America such as Guatemala (Kihn-Pineda et al., 2006), Honduras (Matamoros et al. 2009) and El Salvador (McMahan et al. 2013).

Mexican law protects thirteen freshwater species; however, *Rhamdia guatemalensis* is quite abundant in Chiapas and possesses a wide distribution through other geographic areas of Mexico and Central America (Miller et al. 2005, Hernández et al. 2015). Its inclusion should be reconsidered in the NOM-059-SEMARNAT-2010. Conversely, we suggest that Mexican laws should consider including *Lacantunia enigmatica*, *Rhamdia laluchensis* and *Vieja breidohri* as protected species on the grounds of their restricted distribution.

Since the pioneering work of Lozano-Vilano and Contreras-Balderas (1987), this is the first time the state of Chiapas has been regionalized in a more detailed scale than the three great basins (Grijalva, Usumacinta and Costa). Lozano-Vilano and Contreras-Balderas (1987) proposed seven physiographic regions; however, their proposal was based on physiographic characteristics of landscape relief rather than hydrology. In this study we present a zonation based on the level of hydrological regions (sub-basins), which provides a more robust delineation of the geographical areas for fish species and facilitates a closer examination of the distribution of endemic species. This approach demonstrates that gaps in knowledge of the distribution of species is still quite large and indicates that some portions of the territory remain moderately sampled or unex-

plored. For instance, the Usumacinta-Jataté sub-basin, with only 11 species recorded, remains largely unexplored. The detailed regionalization of Chiapas highlights the necessity of increasing sampling efforts in certain zones.

Although hydrological regions Grijalva, Usumacinta and Costa of Chiapas have been used in previous studies to discover endemism in the state (Rodiles-Hernández, 2005, Rodiles-Hernández et al. 2005, Velázquez-Velázquez et al. 2013), the zonation of our study allows identification of smaller geographic units, permitting us to be more specific in studies of endemism. Thus, the distribution of endemic species in Chiapas includes: *Lacantunia enigmatica* in Usumacinta-Lacantún, *Rocio ocotal* in Usumacinta-Lacantún, *Thorichthys socolofi* in Grijalva-Tulijá and Usumacinta-Lacantún, *Tlaloc hildebrandi* in Grijalva-Teapa and Usumacinta-Jataté, and *Poecilia thermalis* in Grijalva-Teapa. Of the 12 units, Usumacinta-Lacantún stands out as it houses three endemic species: *Lacantunia enigamatica*, *Rocio ocotal*, and *Thorichthys socolofi*.

Forty years of scientific research on the continental fish fauna of Chiapas has gone a long way since the work of Velasco-Colín (1976). However, this does not seem nearly enough time to completely finish to record the real extend of the state species richness with its distribution. In this work we present distributional data at 12 geographic units. However, although this is the finest distributional scale for the state, a major goal should be to complete distributional data for the 92 existing sub-drainages in the state. Many of these water bodies have never been sampled either for lack of financial resources or because they are located in remote areas of the state.

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